



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------------------|------------------------|
| 10/696,683 | 10/29/2003 | Gary L. Heiman | STAN/31 | 5261 |
| 26875 | 7590 | 06/15/2007 | | |
| WOOD, HERRON & EVANS, LLP 2700 CAREW TOWER 441 VINE STREET CINCINNATI, OH 45202 | | | EXAMINER BEFUMO, JENNA LEIGH | |
| | | | ART UNIT 1771 | PAPER NUMBER |
| | | | MAIL DATE 06/15/2007 | DELIVERY MODE PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/696,683

Applicant(s)

HEIMAN, GARY L.

Examiner

Jenna-Leigh Befumo

Art Unit

1771

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,5-8,13,14,16,33 and 36-40 is/are pending in the application.
- 4a) Of the above claim(s) 5-8 and 13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,14,16,33 and 36-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 29, 2007 has been entered.

Response to Amendment

2. The Amendment submitted on March 29, 2007, has been entered. Claims 2, 4, 9 – 12, 15, 17 – 32, 34, and 35 have been cancelled. Claims 1 and 33 have been amended and claims 38 – 40 have been added. Therefore, the pending claims are 1, 3, 5 – 8, 13, 14, 16, 33, and 36 – 40. Claims 5 – 8 and 13 are withdrawn from consideration as being drawn to a nonelected invention.

3. The cancellation of claims 10 – 12 renders moot the rejection of those claims set forth in the previous Office Action.

4. The amendment to claims 1 and 33 is sufficient to overcome the 35 USC 112 1st paragraph rejection since the applicant has removed the limitation that x does not equal y from the claim.

Claim Rejections - 35 USC § 102

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 1, 3, 14, 16, 33, 35, and 38 – 40 are rejected under 35 U.S.C. 102(b) as being anticipated by Love, III et al. (2004/0229538 A1).

Love, III et al. discloses a woven fabric made from at least 50% of synthetic fiber components (abstract). The woven fabric can include synthetic fibers, blends of two or more synthetic fibers, and blends of synthetic and natural fibers (paragraph 14). The yarns can be made from spun or filament

Art Unit: 1771

yarns, or combinations thereof (paragraph 14). Further, the fabric can have a weave construction including plain weave, satin weave, or twill weave fabrics (paragraph 15). The examples teach combining polyester spun yarns in the warp direction with polyester filament yarns in the filling direction (paragraph 58). Also, the spun yarns can include a blend of natural staple fibers with synthetic staple fibers (paragraph 165). Thus, the spun yarns are made of natural fibers. Further, the examples include fabrics made with a 2 x 1 twill weave construction (paragraph 165). Thus, claims 1, 3, 14, 16, 33, 35 and 38 – 40 are anticipated.

Claim Rejections - 35 USC § 103

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

8. Claims 36 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Love, III et al. for the reasons of record.

9. Claims 1, 3, 14, 16, 33, and 35 – 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Collier in view of Lovingood (2003/0190853).

The features of Collier and Lovingood have been set forth in the previous Office Action. While Collier discloses a multicolor woven 2 x 2 twill fabric comprising spun warp yarns and synthetic multifilament filling yarns, Collier fails to teach using a 2 x 1, 3 x 1, or 4 x 1 twill structure.

Lovingood is drawn to woven fabrics made from warp and weft yarns of different composition which dye to produce a desired visual pattern (abstract). Lovingood discloses that the woven fabric can be produced with various weave patterns including 2 x 1 twill and 3 x 1 twill fabrics (paragraph 29). Therefore, it would have been obvious to one having ordinary skill in the art to use a 2 x 1 or 3 x 1 twill structure as disclosed by Lovingood, to produce a different visual effect in the fabric of Collier since Collier discloses that different weave patterns can be used to create different designs in the fabric. Therefore, claims 1, 3, 9, 10, 12, 14, 16, 33, 35 and 38 – 40 are rejected.

Art Unit: 1771

Further, it would have been obvious to one having ordinary skill in the art to choose a 2 x 1, 3 x 1, or 4 x 1 twill weave pattern instead of a 2 x 2 twill pattern to modify the appearance and texture of the fabric. Further, one of ordinary skill in the art would be motivated to increase the float length to a 3 x 1 or 4 x 1 float structure to have longer floats on the surface of the fabric and produce a smoother surface structure in the finished product. Thus, claims 36 and 37 are rejected.

10. Claims 1, 3, 14, 16, 33, and 35 – 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heiman in view of Fairchild's Dictionary of Textiles (Tortora, Phyllis. 7th edition. Fairchild Publications, New York. 2003. p 596).

Heiman discloses a woven fabric having warp and weft yarns wherein the warp yarn comprise spun cotton yarns and the filling yarns comprise continuous filament polyester yarns (column 3, lines 43 – 55). However, Heiman fails to teach using a twill pattern with warp floats in the woven fabric. Fairchild's discloses that twill weaves are a basic twill characterized by yarns that float over or under at least two consecutive picks (definition). The smallest repeat for a twill weave is a 2/1 twill structure (definition). Further, the twill weave is used to produce a strong, durable, firm fabric (definition). Thus, it would have been obvious to one having ordinary skill in the art to substitute a 2/1 twill weave for the plain weave structure disclosed by Heiman since twill weaves are a commonly known weave structure which is known to produce a strong, durable fabric. It would be within the level of ordinary skill in the art to choose the fabric design, i.e., 2 x 1, 3 x 1, or 4 x 1 twill pattern based on the desired appearance and end use of the fabric. Thus, claims 1, 3, 14, 16, 33, and 35 – 40 are rejected.

Double Patenting

11. Claims 1, 3, 14, 16, 33, and 35 – 37 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 – 21 of U.S. Patent No. 5,495,874 in view of Fairchild's Dictionary of Textiles for the reasons of record.

Response to Arguments

12. Applicant's arguments filed March 29, 2007 have been fully considered but they are not persuasive. The applicant argues that Love, III et al. fails to teach spun yarns made of natural fibers (response, pages 8 – 9). However, as acknowledged by the applicant, Love, III et al. discloses spun yarns made of blends of natural and synthetic fibers. Thus, Love, III et al. discloses spun yarns made of natural fibers. Thus, the rejection is maintained.

13. Further, the applicant argues that there is no clear motivation to combine Collier and Lovingood to produce a woven fabric with 2 x 1, 3 x 1, or 4 x 1 twill patterns. Applicant argues that Collier is drawn to weave patterns with a balanced number of warp yarns and weft yarns on the fabrics surface (response, pages 10 – 13). First, it is noted that Collier states that the invention described in the patent can include a wide variety of changes and modifications to the preferred embodiments (column 10, lines 24 – 30). Thus, the invention is not limited to the specific embodiments, but can be modified. Further, Collier teaches that the method of using different types of fibers woven together, wherein the different yarns dye differently is a low cost method of producing a multi-colored fabric, that can be used to provide a wide variety of fabrics and visual effects for bed linens and table linens (column 10, lines 8 – 25). Thus, the preferred embodiment of Collier, i.e., a woven fabric with a balanced number of warp and weft yarns on the fabric surface, is not taught to the complete exclusion of other woven fabric patterns. In fact, Collier has provided sufficient suggestion that the purpose of the invention is to produce various multi-colored patterns with various designs. Further, Lovingood is drawn to multi-colored fabrics similar to Collier, with a different type of yarn in the warp direction than the weft direction. Lovingood discloses that various weave patterns, without limitations, such as 2 x 1 and 3 x 1 twill fabrics, can be used to produce multi-colored woven fabrics. Therefore, Lovingood teaches that a twill pattern produces a desired multi-colored fabric pattern that can be used to make multi-colored woven fabrics. Thus, the references provide sufficient teaching and suggestion that using different weave pattern in multi-colored fabrics is desired and obvious to one with ordinary skill in the art.

Art Unit: 1771

Additionally, the applicant argues that the motivation in the present invention to use a twill pattern is to produce a desired surface texture (response, page 11) while the prior art references are concerned with color designs. However, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

Additionally, the applicant argues that Lovingood is attempting to create a different woven fabric than Collier and cannot be combined with Collier (response, page 12). However, the fact that Lovingood is directly comparing their fabric to the Collier fabric it shows that the two inventions are related. In fact, Lovingood teaches that the only differences between the two inventions are the fact that Collier does not use microfibers or a single dye step. Thus, the weave structure and weave patterns which can be used to produce the woven fabrics of Collier and Lovingood are similar. Further, Lovingood is relied on for what it teaches about the weave structure of multi-colored fabrics in general, i.e., that various weave pattern, without limitation can be used to make a multi-colored woven fabric, particularly a 2 x 1 twill and a 3 x 1 twill.

Finally, the applicant argues that Collier teaches that the fabric may be patterned to introduce variations from the ground cloth, and would therefore, not teach a warp float which repeats along substantially the entire length of the warp yarns (response, page 12). However, Collier teaches that the weave pattern *may* be patterned at intervals to introduce variations into the fabric. First, this is optional and as shown in the figures and examples, the woven fabric is made with a single weave pattern and not multiple patterns. Second, substantially is interpreted as requiring more than 50% of the weave pattern. Thus, a small amount of pattern variation in the fabric is not excluded by the claim. Thus, the rejection is maintained.

The applicant argues that it would not be obvious to one having ordinary skill in the art to use other known weave patterns in Heiman since Heiman teaches that a plain weave pattern is the preferred weave pattern (response, pages 13 – 15). It is noted that while Heiman teaches that a plain weave is the preferred weave pattern, Heiman does not explicitly exclude using other known weave patterns to produce the woven fabric. In fact, the woven fabric claimed in Heiman is not limited to a plain weave fabric. Instead the claims are limited to a woven fabric made from a specific combination of warp and weft yarns, particularly warp yarns made from spun yarns and filling yarns made from continuous filament yarns. Thus, the critical portion of Heiman's invention is the combination of warp yarns made from spun yarns and filling yarns made from continuous filament yarns. Further, in the background Heiman discloses that known sheeting materials have a relatively short usable life due to the laundering process (column 1, lines 22 – 28). And that it is desired for the durability of these sheeting fabrics to improve (column 1, lines 30 – 50).

The weaving art has many well known weaving patterns including plain weave and twill weave patterns. The fabric patterns have been around for thousand of years. One with ordinary skill in the weaving art would have a detailed understanding of how different weave patterns will influence the general properties of a woven fabric. Further, one of ordinary skill in the art would understand that a woven fabric can be easily modified by changing to easily influence some properties without changing the type of materials or the amount of materials which are needed to make a woven fabric. And as shown by Tortora, it is well known how using a twill weave in a woven fabric will influence the general strength and durability properties of the woven fabric. Thus, it would have been within the general skill level of the weaving art to choose the known twill weave pattern for the general weave pattern of Heiman to produce a fabric which are strong and durable. These modifications would require minimal experimentation to modify a plain weave fabric into a twill weave fabric, with a high expectation of success since twill weave fabrics are well known in the art.

Art Unit: 1771

Further, the applicant argues that one of ordinary skill in the art would not be motivated to choose a 2 x 1 or 3 x 1 pattern over a 2 x 2 pattern which Tortora states is one of the most popular patterns in men's clothing. However, the description of Tortora is not limited to men's clothing and the invention of Heiman is not limited to men's clothing. Further, Tortora also teaches other twill patterns such as a 2 x 1 twill pattern are known. Thus, one of ordinary skill in the art would be motivated to choose the twill pattern, as the weave pattern, which provides the best properties, i.e., improved durability and strength, while also producing the most desired feel and comfort to the user. Therefore, the rejection is maintained.

With regards to the double patenting rejection, the applicant argues that according to MPEP § 1504.06 a double patenting rejection cannot be applied if the patent is issued more than one year before the filing date of the application. However, this section, and the entire chapter, are drawn to examination of design applications and do not have bearing on the examination of utility applications, which is what is presently filed. Therefore, the double patenting rejection is proper.

Further, with regards to the double patenting rejection itself, it is noted that the claims of Heiman do not recite any limitations specific to the pattern used to make the woven fabric, but instead recite a general woven fabric. And for the reasons set forth above, it would have been obvious to one having ordinary skill in the art to have chosen a known weave patterns, i.e., a twill pattern which produced a strong and durable fabric, as the weave pattern of the woven fabric claimed in Heiman. Thus, the rejection is maintained.

Conclusion

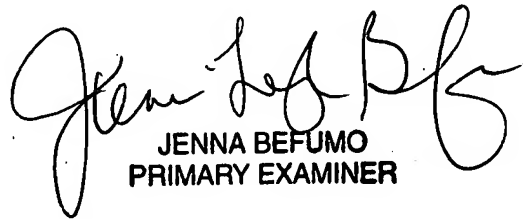
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jenna-Leigh Befumo whose telephone number is (571) 272-1472. The examiner can normally be reached on Monday - Friday (8:00 - 5:30).

Art Unit: 1771

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

jlb
June 10, 2007



JENNA BEFUMO
PRIMARY EXAMINER